

CONTINUITY AFTER CATASTROPHE:
TEMPORARY COMMERCIAL DEVELOPMENTS FOR POST-DISASTER RECOVERY

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ABSTRACT

This major research paper explores opportunities to support small businesses after natural disasters through the creation of temporary commercial developments. The Re:START Christchurch shipping container mall is selected as a case study for further examination into the built-form and urban design characteristics that best support recovery needs. The findings of this paper indicate that Re:START Christchurch not only does a good job of addressing the post-disaster needs of businesses, but also serves to strengthen the identity and community of the recovering city. Best practices and recommendations are extracted from this example to be considered for the Pacific Northwest and other cities recovering from future natural disasters.

Keywords: disaster recovery, temporary development, small businesses, urban design

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Commercial Continuity after Catastrophe: Temporary commercial developments for post-disaster recovery

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1 – Introduction

North America's Pacific Northwest region is overdue for a major earthquake. By best estimates, the area is 315 years into a 243-year average recurring cycle of earthquakes (Schulz, 2015). It is not a question of if, but when this disaster will strike, and when it does there will be significant social and economic ramifications for the region. Japan's infamous 2011 earthquake and tsunami are estimated to have cost \$220 billion in both physical and economic damage, while what is predicted for the Pacific Northwest is expected to be even more catastrophic, incurring a greater cost (Schulz, 2015). To put that scale of economic damage into perspective, Canada's entire federal budget for 2015 was \$289 billion (Government of Canada, 2015). The United States Federal Emergency Management Agency (FEMA) estimates that in the US component of the Pacific Northwest region alone roughly 1 million buildings will be damaged in the earthquake (Schulz, 2015). A substantial percentage of the buildings requiring reconstruction will be commercial buildings housing the businesses that underpin the economy of the region. Schulz (2015) notes the danger of economic collapse in the Pacific Northwest if these businesses are crippled by a lack of basic services. The region will be in a fragile state and will experience tremendous economic and social instability following the inevitable Pacific earthquake.

This region represents just one of many areas predicted to experience a major natural disaster in the near future. It is in these regions' self interest to attempt to provide stability and opportunity to local businesses during the inevitably long recovery process following predicted catastrophic events. One strategy to aid in the recovery of an affected region's small businesses is through the creation of temporary developments (Swaffield, 2013). This form of development involves the siting and construction of provisional storefronts into which small businesses can move while more permanent reconstruction efforts proceed. The Re:START Christchurch shipping container mall in Christchurch, New Zealand, is a good example of this form of development and was installed following a major earthquake in 2011 that significantly damaged the city's central business district. Today, this mall is recognized as a major success story to emerge from the disaster recovery efforts of the city (McClure & Meier, 2013). It has become one of the most popular

destinations in the city and has provided significant support to the local business community.

While there exists extensive literature investigating disaster response and temporary housing/shelter best practices following natural disasters, minimal literature has been developed exploring the potential of temporary commercial developments. Through a synthesis of the established criteria to consider when building temporary housing and the needs of small businesses following natural disasters, this paper will develop criteria with which to assess temporary commercial developments. The case study of Re:START Christchurch will then be analyzed using this criteria in order to answer the main research question of this paper: what built-form and urban design characteristics help to address the needs of small retail businesses and commercial areas in a post-disaster context? Since there is a serious possibility for scenarios similar to the Christchurch earthquake to occur elsewhere in the future, an in-depth examination of this development has the potential to aid urban planners, city officials, and business owners in creating built-form and urban design guidelines for temporary commercial developments in their own cities should catastrophe strike.

Subsequent to this introduction, the research paper will present a brief rationale for the creation of post-disaster temporary commercial developments. The next section will present the main research question, objective, and the methodology used. After the methodology is established, the following section will establish the framework and criteria for assessing post-disaster temporary commercial developments. This will lead into the case-study analysis of Re:START Christchurch's urban design and built-form. From this analysis, best practices and recommendations will be determined and presented in Section 6. The final section will conclude with a reflection on the potential for community building and placemaking through the creation of temporary commercial developments and examine how this research can help inform the disaster planning response for the Pacific Northwest.

2 - Rationale for post-disaster commercial development

2.1 Response and recovery models

Before establishing the rationale for temporary post-disaster commercial development it is important to first establish the distinction between response and recovery efforts, as they are distinct phases of the post-disaster environment. Response refers “to all efforts to save lives, reduce suffering, protect property, and other immediate objectives to reduce threats from emergencies,” (EMBC, 2008, p.3) whereas recovery comprises “efforts to return local authority infrastructure to pre-disaster condition” (EMBC, 2008, p.4). An example demonstrating the importance of the distinction is the provincial to municipal funding assistance in British Columbia’s Emergency Program Act that empowers Emergency Management British Columbia (EMBC) to assist local authorities with 100% of response costs but only 80% of recovery costs (EMBC, 2008).

Many emergency management systems currently work on an escalating response model (EMBC, 2008). In this system, the responsibility to address natural disasters and emergency situations, including response and recovery, begins at the municipal level. Depending on the severity of the event, municipalities can request provincial/state assistance and in worse case scenarios the state/provinces can request federal assistance to aid response and recovery efforts. Emergency contingency funds are not mandated in municipal budgets and all levels of government often have to adapt their budgets after disaster strikes. However, the provincial and federal levels of government do budget for certain unforeseen expenditures and have a small pool of funds to draw from for these emergency situations. For example, Canada’s federal government generally budgets a \$1 billion to \$3 billion contingency fund for emergencies such as natural disasters and economic crises (Zilio, 2015).

Ultimately, the costs associated with the recovery effort for a disaster are impossible to predict and dependent on countless variables. Despite the assistance offered from higher levels of government, municipalities in at risk areas must be prepared to incur considerable recovery expenses and bear the impacts from damaged local infrastructure and economies.

Through planning and strategic management of the recovery process, it is possible for municipalities to rebuild in a manner that strengthens their future economies and lessens the impact of these costs.

2.2 Socio-economic rationale

The economy of a post-disaster region is tremendously fragile. Counter intuitively, there is often a temporary boost to the economy of a disaster stricken area immediately following an emergency event due the substantial amount of reconstruction spending and activity and people replacing items damaged in the disaster (Hayashi, 2012). However, this increase is generally extremely short-lived and often hides the long-term damage done to the region's small businesses. Alesch, Holly, Mittler, and Nagy (2001) note that after a natural disaster, small businesses are likely to close permanently, while others quickly relocate outside of damaged city centres. Zhang, Lindell, and Prater (2009) note, the "research on business impacts has been less developed compared to the extensive literature on the community impacts of environmental disasters" (p.38). However, it must be recognized that the implications of disasters on communities and businesses are similar and the two are intricately linked. Businesses cannot survive without communities to support them and "community recovery depends in part on the ability of businesses to employ people," in addition to providing a place for them to acquire goods and services (Kemp, Chan, Grimm, 2013, p. 47). Because of these comparable requirements, much of the methodology developed to mitigate harms to communities can be applied to businesses as well. Similar to the social disruption communities face, businesses will experience economic disruption caused by a delay in relocation or the relocation to an inappropriate area (El-Anwar, El-Rayers, El-Nashai, 2010). A survey looking at businesses after disasters conducted by Kemp et al. (2013) revealed that businesses identify maintaining customer support, access, and proximity to complimentary businesses as the most important factors for the survival of their businesses. Plans must be developed to support small businesses in their pre-disaster context in order to provide these businesses, their employees, and customers a sense of economic continuity through the inevitable turmoil.

Financing small business recovery

An illustrative example of an attempt to support small businesses is offered by Hayashi (2012), who explored Japan's economic reconstruction following major earthquakes and tsunamis in Kobe and Tohoku. It is estimated that the direct economic damage of the combined Kobe and Tohoku disasters is equal to 5.5% of Japan's gross domestic product (Hayashi, 2012). Hayashi notes that residents of the devastated areas who lost their homes and jobs quickly relocated to unaffected regions to live and work. A similar effect could be seen in large companies transferring their employees to stable plants and offices away from the disaster zone (Hayashi, 2012). The economics of the disaster recovery process in Japan are well established and take a similar structure to most other emergency management systems. Japan also operates on the principle of subsidiarity (escalating response model), where recovery responsibility begins with the smallest form of government and expands to larger levels if necessary. However, Hayashi (2012) notes that bureaucratic red tape in Japan acted as a substantial impediment to reconstruction and continues to limit recovery efforts. Despite bureaucratic limitations, polls taken in the immediate aftermath of disasters in Japan showed that "60% of respondents were in favor of raising consumption taxes for reconstruction purposes" (Hayashi, 2012, p.204).

There is also a substantial private sector component to recovery funding in the Japanese context. Hayashi (2012) found that, on average, only 60% of recovery capital came from the public sector, with the private sector contributing the remaining 40%. This dynamic not only demonstrates the substantial level of investment the private sector is prepared to contribute, but also suggests the possibility for public-private partnership opportunities in the recovery effort.

While more often associated with third world disaster and humanitarian relief efforts, private earmarked donations to charitable organizations like the Red Cross are prevalent after major natural disasters. Disaster-specific relief and recovery funds are also often rapidly established in the immediate aftermath.

After the 2011 Christchurch, New Zealand earthquake, the Canterbury Business Recovery Fund was founded. This fund received an initial infusion of money from the government of \$2.5 million, which acted as the platform upon which a further \$5.4 million was privately donated to the trust (Canterbury Business Recovery Group, 2011). This fund was specifically started to “provide cash-injections to help businesses survive, revive and thrive” (Canterbury Business Recovery Group, 2011). Three hundred and sixty of the small businesses in Christchurch that were impacted by the earthquake, but still deemed viable, received funding to cover expenses brought upon by the earthquake (Canterbury Business Recovery Group, 2011).

Similarly, an independent trust, The Christchurch Earthquake Appeal, was founded under the New Zealand Charities Act and it has charitable status in New Zealand, Australia, and Canada (Christchurch Earthquake Appeal, 2015). It is partially publicly supported through the New Zealand government financing all administration costs and allocating resources to improve its fundraising capacity. The Christchurch Earthquake Appeal is also answerable to the public through a mandate that all received funds must be put towards the recovery effort and that the finances of the organization will be auditable by the New Zealand Public Audit Office (Christchurch Earthquake Appeal, 2015). This fund has been instrumental in the development of the Re:START container mall by providing an interest free loan of \$3,368,523 (Re:START, 2015). This money, in partnership with private sponsorship and funding from ASB Bank and the public entity Christchurch Central Development Unit, made the pop-up commercial development possible. These creative public-private-partnership funding options for financing disaster recovery demonstrate the potential opportunities available to governments to support the commercial sector following natural disasters.

Through the emergency funding models currently in place, municipalities have the opportunity to positively direct these recovery efforts towards supporting businesses through earthquake recovery. Creative management and implementation of the municipal finance and planning tools available to cities in such times can foster a commercial sector that emerges stronger than before the disaster. The aligned public-private objectives in the rebuilding effort produce opportunities for collaboration to benefit the region’s efficient

recovery. Ultimately, the sooner businesses can return to their pre-disaster state or better the faster the region's economy will recover. Andres (2013) notes the positive ability of temporary developments to stimulate the economy, and that by providing spaces to people attempting to develop profitable businesses, the city potentially expands the tax base to support the revitalization of the urban environment.

The scale of damage that a major earthquake threatens is staggering. This destruction not only impacts the physical built-form of a region, but also severely damages the economic structure of the area. Small businesses located in dense city centres are particularly at risk if the damage to these business districts requires long periods of demolition and reconstruction. Damage to this segment of the economy not only impacts owners and employees, but also the communities that suddenly find themselves without access to the goods and services they desperately require during these difficult times.

Social and community recovery

The destruction of commercial areas can have a significant impact on the residents of a city and their sense of community and identity. These areas often act as the important "third place" identified by Oldenburg (1999), a public place where people can congregate and interact and an essential element for community building. The sense of community that these places create is vital to resident's social wellbeing and psychological health (Oldenburg, 1999). The destruction of these commercial areas by a natural disaster not only impacts the economic structure of a region, but can also be devastating to a community's social structure. As noted by Lee (2013), a community's "sense of attachment to the land – whether personal, social, commercial, historical – is only heightened by the stark absence of place that had forged their identity pre-disaster" (p. 484). The powerful sense of place that is lost when these areas are destroyed is often devastating to a community's identity and happiness.

Rebuilding these commercial areas can be one of the most meaningful reconstruction activities for the recovery of a community. These redevelopments can act for residents as a "symbolic opportunity to reassert their right to the city" (Lee, 2013,

p.484). While the importance of rebuilding key urban infrastructure for improving access and habitability shouldn't be understated, research supports the strengthening of communities as equally, if not more, important than physical reconstruction (Lee, 2013). The creation of temporary commercial developments has the potential to facilitate both of these objectives through the strengthening of a sense of community and the physical reconstruction efforts. Supporting small local businesses and communities through temporary commercial developments advances what Lee (2013) identifies as one of the main goals for post-disaster design interventions, "rebuilding communities through development of shared competencies and values, and strengthening of social capital" (p. 487).

This socio-economic rationale for developing temporary commercial facilities highlights the positive impact and environment these developments can create in a city's post-disaster recovery. Chuanlan, Black, Lawrence, and Garrison's (2012) research into the post-disaster recovery of retail facilities highly recommends "the use of public resources to supplement market forces in returning retail facilities to a vibrant state in order to assist the general population in returning to normal life" (p.647). While temporary developments are just one small aspect of the recovery process and may only represent a minor element of the city's economic and social structure, the sense of investment, identity, and community they can provide should make their creation a priority action following a disaster.

3 - Research question, objective, and methodology

3.1 Site selection: Case study of Re:START Christchurch

It is important to look at the impacts of natural disasters upon small retail businesses in order to best address their needs during recovery, as well as analyze attempts to address these needs in real life scenarios. While there have been noted attempts made to specifically support small businesses through the recovery period, such as retail outlets being permitted to operate out of a local college gymnasium after the 1983 Coalinga earthquake (Durkin, 1984), few initiatives have been as ambitious or intensive as the Re:START Christchurch development. For the purpose of this essay, the Re:START shipping container mall in Christchurch, New Zealand has been selected as a site of case study to examine urban planning efforts to support small business recovery following a natural disaster. The primary research question this paper attempts to resolve is: What built-form and urban design characteristics help to address the needs of small retail businesses and commercial areas in a post-disaster context? Re:START Christchurch was created following the destruction of the city's central business district by an earthquake and is a direct attempt to address the needs of small businesses through built-form and urban design interventions.

On February 22nd, 2011 a major earthquake struck Christchurch, the largest city on the south island of New Zealand, resulting in significant damage to the city's central business district. Prior to this event, the central city contained over 6,000 businesses and employed over 50,000 people (The Field Connection, 2012). The extent of the damage from the earthquake required a significant portion of the central business district to be designated a public exclusion zone and to be permanently cordoned off from public access while demolition and reconstruction activities were undertaken.

In an effort to help business owners affected by the establishment of the public exclusion zone, the creation of a temporary mall was permitted on the edge of the city's damaged central business district. The Re:START container mall was developed through

the re-purposing of shipping containers to re-establish a small retail district. The development was intended to be an interim measure and only a 6-month lease on the land was initially obtained. This original project consisted of 27 shops spread over 2 blocks (Heather, 2011). As a quickly deployed, reactive, and temporary development, Re:START Christchurch is an excellent representation of urban design and built-form interventions being applied to aid small businesses recovery efforts following a natural disaster. The relative recentness of this situation and its occurrence in a developed country makes it a good example of contemporary disaster recovery practices and it will serve as an excellent case study from which to gather best practices for the Pacific Northwest and elsewhere.

3.2 Research objective

Considerable literature has focused on the best practices for the provision of temporary housing and reconstruction after natural disasters. However, little research has explored the provision of temporary commercial areas for businesses displaced by catastrophic events. A focused investigation into the best practices for the development of these temporary districts is needed to guide policy and to help ensure the economic wellbeing of communities during recovery. Given the length of time often necessary to rebuild disaster stricken cities, one potential result is that temporary business districts become more permanent fixtures as new patterns of movement and commerce develop and solidify. It is therefore imperative that the siting and form of these districts be given substantial consideration and are not approached in a hasty manner.

Analysis of Re:START Christchurch has the potential to provide valuable insights for urban planners and city staff in other communities recovering from natural disasters into the ways to support small businesses so they can quickly rebound following a natural disaster. The processes by which Christchurch has mitigated economic harms following its earthquake represent a useful case study for the major urban centres of the Pacific Northwest to learn from. The currently predicted, substantial earthquake in the region will leave cities such as Vancouver, Seattle, and Portland, fundamentally altered. Portland has estimated that approximately 3 out of 4 of its commercial buildings will require some form

of structural repair prior to them being certified for re-occupancy which will take several months to a year to complete (OSSPAC, 2013). This represents thousands of businesses displaced in a single city alone.

Though immediate disaster response and management for many at-risk regions has been thoroughly investigated, there exist gaps in the literature around the urban planning implications of recovery following catastrophes. Through the careful application of the insights gained from Christchurch and the related research literature, the municipalities of the Pacific Northwest and others can adapt their planning policy and direction in the urban design and built-form of temporary post-disaster commercial developments. This analysis of post-disaster developments can provide meaningful insights into how at-risk cities can minimize the waste of valuable resources, mitigate post-disaster socioeconomic disruptions, and avoid unnecessary public expenditures (Kemp et al, 2013). Furthermore, this substantive research is essential to ensure that these cities are able to rebound as effectively as possible and to provide the residents with a sense of continuity during chaotic times.

3.3 Method

The approach of this major research paper is a combination of literature review, periodical article review, and an analysis of observational data collected from case study site photos. An in-person visit to the site to collect direct observational data would have been beneficial to the study but, due to the location of the case study site, this was not possible for this major research paper.

The literature informing this study focuses on several key areas: temporary urban land use and design, post-disaster reconstruction, and post-disaster socio-economic impacts. A set of criteria has been developed through a review of this literature to identify the needs of small business following a natural disaster as well as the strategies employed by previous temporary disaster response developments. These criteria will be used to analyze the Re:START Christchurch case study and to develop a set of best practices and recommendations for temporary development implementation in future contexts.

In order to better evaluate if Re:START is adequately addressing the physical needs that best support the recovery of small businesses, photographs of the development have been analyzed to identify its key built-form and urban design features. When investigated in combination with newspaper articles and other literature written about the development, these photos can be assessed to determine positive and negative results of its specific urban design and built-form. These results can help inform best practices for future efforts to support small businesses through built-form and urban design interventions.

4 – Criteria for assessing post-disaster commercial developments

4.1 Lessons learned from temporary housing literature

Considerable research has focused on the best practices for the provision of temporary housing and shelter reconstruction after natural disasters. Zhang et al. (2009) note that, “procedures for providing congregate care for displaced households can be readily adapted to accommodate displaced small businesses” (p. 50). Although the needs for residential developments and commercial developments are unique, there is significant crossover between the two in a post-disaster context and the established research on temporary housing can be drawn from for insights.

One of the more comprehensive and contemporary pieces of literature on the subject is Nappi and Souza’s 2015 paper on hierarchical structuring criteria for selection and location of temporary shelters. Through a systematic review of documents published by aid organizations on disaster response and recovery, the paper clearly establishes a set of 10 criteria to determine the appropriate siting and design elements for temporary housing: “location, optimal distribution, urban infrastructure, safety, physical adequacy, cultural adequacy, privacy, environmental comfort, universal accessibility and economic aspects” (p. 2428). Though some of these criteria are more relevant to the housing of people than the running of a business, they represent important considerations when implementing a temporary development. The framing of these criteria is also done in respect to housing needs, but again they have the potential to be succinctly reinterpreted to reflect important considerations when building temporary commercial developments.

An analysis of the literature investigating the needs of small businesses in a post-disaster context will allow for a reframing of the criteria outlined by Nappi and Souza (2015) through a commercial development lens.

4.2 The impacts of natural disasters on small businesses

The impacts that disasters inflict upon small businesses can be identified in established literature bridging multiple disciplines including business development and disaster research. These studies consistently note the high vulnerability of small businesses to disasters, the needs of local businesses through the recovery process, and critical role that small businesses play in a community's ability to recover from a disaster. Of the literature exploring this topic, two papers stand out for their explicit investigation into the impacts on small businesses.

Zhang et al. (2009) highlight the greater vulnerability of small, community businesses to the impacts of natural disasters. Through the development of a conceptual model of disaster impacts on businesses, their research establishes the four specific vulnerabilities of these businesses to disasters: "capital vulnerability, labour vulnerability, supplier vulnerability, and customer vulnerability" (p. 42). The key factors of these vulnerabilities are:

1. Businesses with few employees, large amounts fixed assets and inventories, and leased capital are identified as having the highest **capital vulnerability**.
2. Businesses impacted by the significant short-term population changes in a community following a disaster and that have employees whose access to their workplace is disrupted, are forced to relocate far away, or are unable to work from home exhibit the highest **labour vulnerability**.
3. Businesses exhibit **supplier vulnerability** when the regional distribution of supplies and services they are reliant upon is interrupted by the disaster.
4. **Customer vulnerability** shares similarities with labour vulnerability in that population dislocation is the main driving factor. This loss of customers is most felt by businesses serving a small local market entirely impacted by the disaster.

Although this research demonstrates that some small businesses that serve the needs of the reconstruction effort, be they materials suppliers (furniture, hardware) or

service suppliers (restaurants, hotels) can see dramatically boosted sales in the post-disaster economy, the findings are clear in identifying the characteristics of most small wholesale and retail businesses make them quite vulnerable to the effects of disasters (Zhang et al, 2009). Zhang et al. (2009) recommend special attention be paid to the emergency response and recovery needs of small businesses because of the increased vulnerability to disaster impacts these businesses face relative to their larger counterparts and because of their crucial role in community employment and local government revenue generation.

Alesch et al. (2001) look specifically at the effects of natural disasters on small businesses and not-for profits through the analysis of interviews with business owners. Their findings highlight the greater impacts experienced by small businesses when recovering from a disaster and they attempt to offer insights and recommendations to small businesses to enhance their recovery efforts. Through their research on the impacts of the 1994 Northridge Earthquake, they were able to come to several conclusions about the effect of the earthquake on the small businesses of the area:

- Most businesses do not fail immediately after the event
- Most losses do not occur during and right after the event
- Most business owners had few ideas about how to recover

They were also able to provide insight into the slow recovery rates experienced particularly by retail businesses. These greater impacts are intricately linked with the disaster's effects on customers. They concluded that:

- When businesses cannot supply them, the customer goes elsewhere
- When the customer loses purchasing power, business suffers
- When the customer moves away, the organization suffers

These findings again demonstrate the added pressures and challenges faced particularly by small retail businesses following natural disasters.

While these two studies offer an explicit and focused investigation into the impacts of disasters on small businesses, other post-disaster studies have identified similar impacts

and reveal consistent findings. Kemp et al. (2013) revealed, through a survey looking at businesses after disasters, that businesses identify maintaining customer support, access, and proximity to complimentary businesses as the most important factors for the survival of their businesses.

4.3 The needs of small businesses following natural disasters

Having identified in the established literature the major impacts that natural disasters inflict upon small businesses, it can be concluded that any intervention intending to specifically support the recovery of small businesses must work to minimize these impacts. As the research has identified that it is often retail-oriented businesses that have the most difficult recovery following a natural disaster, special attention must be paid to the needs of these businesses.

Through a synthesis of the impacts of environmental disasters on small businesses identified by the existing research, the major needs of these businesses during the recovery effort have been identified as the following:

Access

Addressing the issue of access can mitigate the impacts of three of the four vulnerabilities of small businesses identified by Zhang et al. (2009), these vulnerabilities being: Customer, Labour, and Supplier. The business model of many small businesses, which rely on in-store purchases and salespeople to generate sales, assume that both customers and employees are able to access the physical store. These businesses also require easy and rapid access to regional distribution networks to resupply their inventory. When the access of any of these things to the business is compromised by a natural disaster, the business' recovery suffers.

The need of small businesses for access following disasters is also closely tied to the issue of proximity. This need can be best exemplified by the old real-estate adage of "location, location, location". Having inventory, employees, and customers all in relatively close proximity to one another can significantly help businesses recover, particularly

during the turbulent times following a natural disaster where there will be damage to transportation infrastructure and the movement of people and goods will be difficult (OSSPAC, 2013). The location, positioning, and layout of temporary commercial developments must be considered in relation to temporary housing projects and to established and evolving patterns of movement in the post-disaster city.

Stability

The traumatic effects of a natural disaster do not end when the shaking stops, waters recede, or fires die down. As noted by Alesch et al. (2001), many small businesses do not fail immediately following a disaster, but often slowly dwindle during long recovery efforts. This slow demise is not necessarily the result of a failure to recognize the new customer patterns that get established during recovery, but from an inability to address changes due to a lack of economic agency. This powerlessness can be correlated to the physical instability of a post-disaster region and also touches upon the capital vulnerability of small businesses identified by Zhang et al. (2009).

In small businesses the primary manifestation of this physical instability is the temporary loss of leased or owned assets, namely storefronts, in which to operate due to damage and the time necessary for reconstruction. Small businesses require the reestablishment of physical stability, in the form of space in which to operate, in order to regain economic agency. This reestablishment is essential for businesses to operate with any semblance of normality. Depending on the state of a region's built-form following a disaster, provisional commercial structures may need to be constructed in order to provide businesses with a sense of physical stability in which to operate.

The need for stability also extends to the need for security. In addition to inventory losses from the disaster itself, there is the distinct possibility that small retail businesses will have suffered from the looting that is common in the immediate aftermath of disasters. Instances of this have been documented in the aftermath of Hurricane Katrina and Hurricane Andrew (OSSPAC, 2013). This looting can often be attributed to individuals taking advantage of overburdened law enforcement following a disaster. A large-scale

disaster however, can stretch a region's supplies and resources thin, and when this is considered in combination with hoarding exacerbated by the erosion of the food supply (OSSPAC, 2013), businesses with inventories of much needed supplies are at a greater risk for looting. In order to address these needs for security, any development designed to function as an interim storefront for a business during the recovery process must be secure enough that business owners are confident in its ability to securely store their inventory. Because of this, tents and other structures that do not offer adequate security are inappropriate as temporary commercial developments.

Ultimately, the majority of the needs of small retail businesses recovering from natural disasters are much the same as the needs of small businesses during normal operations. It is however, the intensity and immediacy of the disaster that serves to exacerbate these requirements and reduce the ability of businesses to adapt.

4.4 Criteria for analyzing post-disaster commercial developments

Having now established the needs of small businesses following natural disasters, Nappi and Souza's (2015) criteria for temporary shelters can be reinterpreted to develop a framework to assess temporary commercial developments. A post-disaster temporary commercial development should address:

1 – Location

- Accessibility – The location of a temporary development should consider the proximity and state of transportation infrastructure
- The development must be safe and suitable for access by customers and employees. This involves the consideration of the maximum distance to be covered in order to reach the development and the capacity of the development

2 – Safety

- The development must provide security against theft and looting of supplies
- The development must be built according to recognized safe construction practices and to current standards

- A strategic planning of periodic inspection shall be provided to ensure that the solutions applied to the development continue to be effective over time
- The development should be located at a reasonable distance from any danger zone in order to minimize the risks
- The development must have firefighting systems

3 - Urban infrastructure

- The development should be sited in a location with:
 - Sewage collection
 - Regular collection of solid waste (garbage)
 - Power source availability
 - Regular water supply or easy access for heavy vehicles and tankers

4 - Physical adequacy

- The development should be of an adequate scale that interior spaces support:
 - Storage of inventory
 - Office and personnel

5 - Cultural adequacy

- The development's design and construction should be undertaken by specialists with expertise in local solutions

6 - Environmental comfort

- The specific climatic conditions for each season should be evaluated so that the development accounts for thermal comfort, ventilation and protection
- The development should optimize natural ventilation and minimize direct sun exposure
- Trees or other types of vegetation should be preserved or installed whenever possible in order to increase water retention, minimize soil erosion and to provide shade
- The development should be adaptable to climatic variations

7 - Universal accessibility

- The location of the development must comply with the standards and procedures for building approval, especially the ones regarding applicable accessibility requirements for people with reduced mobility, vision or communication skills

Though this modified criteria is simpler than the ten point system developed by Nappi and Souza (2015) for temporary housing projects, it should sufficiently provide an adequate assessment of a temporary commercial development's urban design and built-form.

While there are certain aspects to recovery outside the scope of urban planners' authority and ability, planners do have the power to support the important recovery of these businesses through physical interventions in the city's built-form and spatial organization. Planners have the capacity to mitigate the issues of what economists refer to as indirect damage (loss of economic activity resulting from the disaster) by addressing the issues of direct damage (damage to buildings, infrastructure, etc.) (Pelling, Oezerdem, and Barakat, 2002). Through thoughtful and informed planning efforts to address the outlined criteria, the small businesses of a disaster stricken community can be empowered to thrive through the post-disaster recovery and beyond.

5 - Re:START as a case study of a post-disaster commercial development

Using Re:START Christchurch as a site of case study, this paper will investigate whether Re:START's built-form and urban design adequately address the needs of small businesses following a natural disaster through the criteria identified in the established literature.

5.1 Access

As previously identified, in order to best support the recovery of small businesses, the first issue any post-disaster commercial development must address is that of customer, labour, and supplier access. One of the most influential determinants of this access results from the siting location of the development.

Siting

The Re:START Christchurch development was intentionally and strategically located within the public exclusion zone of Christchurch's heavily damaged central business district. Its siting was the direct result of an acknowledgement that the central city's business area would be cordoned off from public access for an extended period of time and new retail patterns would otherwise emerge. This siting was explicitly intended to re-establish spatial and economic patterns in the city centre years before it would otherwise take place (Re:START, 2015).

The development's siting also came about through the recognition of the need to concentrate retail activity into a single district. Of the retailers whose buildings survived the earthquake and were allowed to reopen in the central city, many noted the loss of adjacent businesses, a general fear of the central city area, poor access to storefronts, and substantially decreased or non-existent foot traffic (The Field Connection, 2012, p11). Because of these impacts, Cashel Street, the city's historic pedestrian mall located on the edge of the exclusion zone, was selected by the city's property and building owners group

to be site for the temporary commercial development that would concentrate central city's retail to help with all aspects of access (Re:START, 2015).

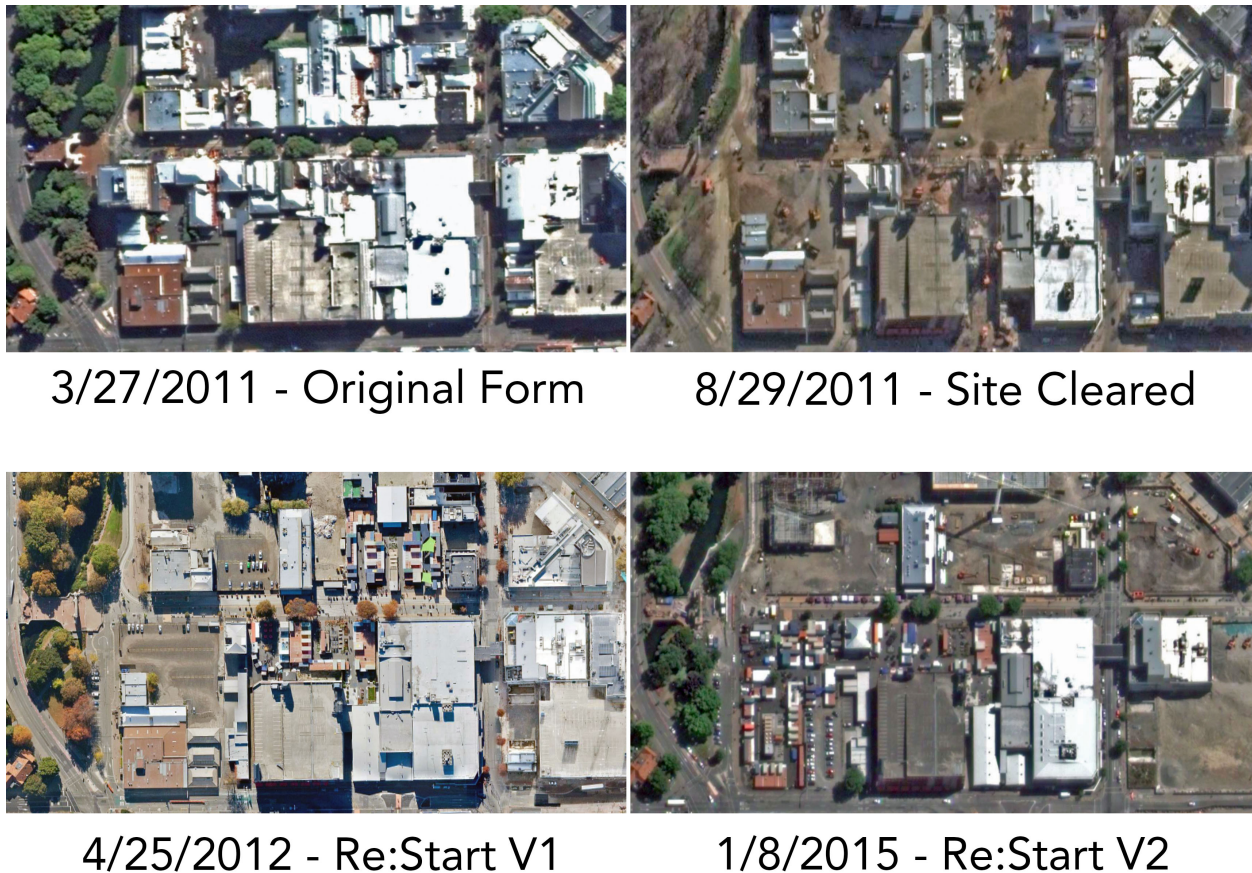


Figure 1. Morphology of Re:START Christchurch site. (Google Earth, 2016)

Since 1982, Christchurch's Cashel Street City Mall had functioned as a pedestrian only outdoor shopping street. This street was lined with heritage buildings and acted as one of Christchurch's main attractions. Unfortunately, many of the street's historic structures collapsed during the earthquake resulting in several fatalities (Lynch, 2011). The desire to reclaim and bring people back to one of the city's main attractions as soon as possible was understandable, but it was more the site's physical state that enabled it to function as a temporary development. As visible in Figure 1, the earthquake resulted in the development of several large, empty, street-front lots through the demolition of the historic, but damaged, storefronts. These lots represented roughly 6500m² of lost retail space along the 400m long, 15-18m wide right-of-way of Cashel Street.



Figure 2. Site plan for Re:START Christchurch and relation to public exclusion zone (right). (CERA, 2011)

The Cashel Street location also functioned to address the issue of the development's placement in the public exclusion zone. Figure 2 shows the site's position on the periphery of the exclusion area and how its pedestrian-only status meant that a development in this location would not hinder the recovery effort elsewhere by interrupting important vehicle access routes and undermining the intent of the exclusion zone. Further to this, siting businesses so that they are accessible to workers in the recovery effort takes advantage of one of the strongest markets in a post-disaster economy (Zhang et al, 2009).



Figure 3. Christchurch Tram tracks in the Re:START development. (Re:START, 2016)

Siting the development in the central city also allows businesses to take advantage of the city's pre-existing transportation infrastructure. The development is located two blocks from the city's main bus interchange and is in a very central location relative to the transit network. Further to this, although Cashel Street is closed off to automobile traffic, it does have a branch of Christchurch's historic tram system running down the length of the street as seen in Figure 3 and two stops are located directly along this retail stretch. This network is not a part of the city's official transportation network and functions more as a tourist attraction, but it does allow for improved mobility through the central city.

Because of its accessible location and historic land-use, the site selection for the Re:START Christchurch development was a very logical choice for re-establishing commercial retail patterns in the central city. Furthermore, by locating the development in a central location relative to greater Christchurch's urban form, it could be argued that an

equity of access to Re:START from the surrounding areas was better attained than if it were in a peripheral location.

Proximity

Because the development of Re:START Christchurch was an effort specifically targeted to address retail patterns in relation to the central city public exclusion zone, its location in the city centre was an intrinsic part of its concept. However, this location in the central city must be assessed for suitability to best support small business recovery and address the issues of access to customers, labour, and suppliers.

Locating business redevelopment in close proximity to the city's housing supply is one of the best ways to address customer and labour access because of the potential for serious disruptions to a city's transportation network and other mobility challenges following a disaster (OSSPAC, 2013). In Christchurch, roughly 7500 homes had to be vacated following the earthquake and temporary housing projects were developed in response (Swaffield, 2013). These developments were located well outside the city centre, the closest one being roughly 3 km away. Superficially, it would appear that any planned business redevelopment activity should have been located near these developments to take advantage of the city's new population distribution. In the case of Christchurch however, many residents chose to individually acquire their own temporary accommodation and only 83 official temporary housing units, developed in a low density form, and spread over 3 locations were ultimately constructed (MBIE, 2013). Because the city's population did not become concentrated into dense, temporary housing developments, locating commercial redevelopment in close proximity would have offered little market advantage in this scenario.

Relocating a temporary business development towards the outskirts of town might also be appealing for short-term gains and for quickly establishing a development for small businesses. A city-edge location could offer closer proximity to housing developments for customers and labour, greenfield land that is easier to acquire and develop, and a simpler utility and infrastructure network for easier supplier access. While this advantage may be

true for the short term, Alesch et al. (2001) note that most businesses do not fail in the short term following a disaster and a longer-term approach to recovery is necessary. The placement of Re:START Christchurch in the central city was a conscious decision to support the long-term recovery of the city's small businesses. Following the Christchurch disaster, efforts to reconstruct and replace damaged infrastructure were prioritized in the city centre in an effort to attract private investment and return it to an inspiring place to live, work and visit (Howes and Cheesebrough, 2013). Although the development of Re:START in a central city context may have been slightly more time consuming and complex, ultimately customer, labour, and supplier access is far better addressed in this location than it would've been in a city-edge location.

5.2 Stability

Following a disaster, the physical instability and unpredictability of a region is one of the greatest threats to business recovery and one of the clearest reasons why initiatives that improve stability and support recovery are necessary. In order for a temporary commercial development to provide this support, its built-form and urban design must be carefully considered in context with its siting, function, and future objectives.

Built-form / Urban design

The Re:START Christchurch development is based around the concept of shipping container architecture. Although this form of development has become increasingly popular in recent years, Re:START Christchurch was one of the first notable examples to structure a shopping precinct around the innovative built-form (Berg, 2011).



Figure 4. Modular construction with shipping containers. (Re:START, 2016)

A design by the Buchan Group, Re:START's shipping container model of development emerged from the firm's previous use of the built-form in a residential development. The concept centered on the ability to use the containers for "single or multi-storey formats to create an interesting, vibrant retail precinct" (Buchan Group, 2016). As Figure 4 demonstrates, the decision to use shipping containers facilitated extremely rapid construction, with the development taking only 8 weeks to be built once the site was accessible (Buchan Group, 2016). Shipping containers are an easily transported and acquired building material in the modern world of global shipping. The ability to easily obtain and rapidly set up/take down shipping container developments is one of the driving

factors behind their popularity in temporary, short-term lease, and pop-up shop developments worldwide.



Figure 5. Canopies suspended over market lanes for shade. (Re:START, 2016)

Most of the business spaces consist of at least two containers welded together to be wide enough to accommodate employees, customers, and inventory to all comfortably fit inside without crowding. The containers have also had many windows and openings added to make the spaces bright and accessible. Most second storey containers serve primarily as signage for their respective businesses, but some businesses use these spaces for seating and incorporate second-storey roof decks into their form. As visible in Figure 5, the double height of the containers is also taken advantage of to support the suspension of canopies over some of the internal pathways in the development and to provide shade and shelter.

Re:START originally consisted of a north and south precinct on either side of Cashel Street, each with substantial central public space. The development features a mix of retail,

restaurants, and cafes integrated with extensive seating and landscaping to balance visitor's needs and create a welcoming environment in which to linger. The shipping containers have also been strategically sited and oriented so as to screen off adjacent damaged areas from view while in the development and to help develop a sense of place and vibrancy (Buchan Group, 2016). The layout of the shipping containers in the development creates a network of market lanes connecting small landscaped features, public art, and courtyards that draw people into the space and encourages exploration.



Figure 6. Second site plan for Re:START Christchurch and its transition to a new location. (Brownlee, 2014)

The flexibility and modularity of the built-form has proven to be an essential aspect of the development's survival. Re:START was only ever intended to be a placeholder until the reconstruction of the Cashel street sites could begin. When this eventuality came to pass for Re:START's northern precinct in 2014, the development's portability allowed it to be easily transferred to another lot on the south side of Cashel Street in only nine days and to then be reintegrated with the existing south-side lot as Figure 6 demonstrates (The Buchan Group, 2016).

Security

The use of metal shipping containers for the Re:START's built-form plays a critical role in the safety and security of the development. Because of their intended use in the global shipping industry, the containers are engineered to be extremely strong, durable, and secure. Because of their metallic construction, building methods with the containers involve heavy duty welding and result in structures that are as secure from looting, theft, or vandalism, if not more so, than traditional building methods.

The Christchurch area has experienced more than 12,000 aftershocks since the first tremor in the area in 2010 (Swaffield, 2013). The Re:START development had to be built to a standard that could endure the ongoing geological instability of the area without failing. Shipping containers are designed for maximum durability and to be stacked to significant heights. While traditional building designs and materials could be engineered to similar standards to withstand aftershock events, the convenience and simplicity of shipping container construction made the material a logical choice for development.

5.3 Re:START analysis - Criteria for post-disaster commercial development

Using the modified criteria developed from Nappi and Souza's (2015) standards for temporary shelters, Re:START Christchurch can be assessed to determine if it adequately comprises the seven features that post-disaster temporary commercial developments should address.

1 – Location

The Re:START development's location in the central city is an appropriate location accounting for proximity to transportation infrastructure and for safe access by customers and employees.

2 – Safety

The Re:START development's choice of building material (shipping containers) offers a secure and versatile built-form that is exceedingly safe for users. The development's siting in the public exclusion zone of the central city is a carefully selected

location that limits risks from the adjacent rebuilding. The metallic construction offers minimized fire risk.

3 - Urban infrastructure

The Re:START development's location in the central city is a conscious acknowledgement that infrastructure improvements have been prioritized for the area.

4 - Physical adequacy

The ability for shipping containers to be modularly integrated allows for the creation of structures to suit many needs and to adequately accommodate the storage of inventory, office, and personnel on a business-by-business basis.

5 - Cultural adequacy

Re:START's human scale and pedestrian oriented urban design represents a thoughtful continuation and integration with Cashel Street's historic role in the city. Though the temporary development is a modern and unconventional form, it serves the needs of its local users and business well.

6 - Environmental comfort

The shipping container built-form of Re:START provides more than adequate environmental comfort internally, while the use of canopies and extensive implementation of landscaping aids in water retention, minimizes soil erosion, and provides shade.

7 - Universal accessibility

The decision to site the Re:START in a pedestrian mall substantially improves the development's potential for universal accessibility. The majority of businesses are at ground level, internal circulation paths are wide for improved mobility access, and the layout of the development is intuitive and legible.

6 - Best practices and recommendations

The analysis of the Re:START Christchurch case study's success in addressing the identified needs of small businesses following natural disasters allows for the identification of some best practices and recommendations for the planning of other temporary commercial developments in post-disaster cities. Although the lessons learned from a single case study cannot represent the ideal response practices for all situations, the successful initiatives from this context can help to inform future responses to the unpredictable impacts of environmental disasters elsewhere. These best practices developed through the analysis of Re:START Christchurch can offer general guidance to future scenarios but must be interpreted and applied within the context of the specific event they are responding to.

6.1 Siting of temporary commercial developments

As demonstrated by Re:START Christchurch's more permanent role in the city's identity, selecting the location of where a temporary commercial development should be situated has long-term ramifications for the involved businesses and the city as a whole. The location of the development also has the potential to entrench new movement patterns in the reconstructed city and can set-up a drastically altered urban form in the post-disaster city structure. Re:START Christchurch offers the excellent lesson that the selection of easily developed and accessible land in the short term should not undermine the recovery goals of the city and business community in the long term. Though this may mean that a temporary commercial development takes slightly longer to initiate, once underway, the recovery processes should be more stable and supportive for small businesses and can help the community regain a sense of normality and identity.

Unknown site conditions stemming from a disaster add complexity to the siting process and demand site selection adaptability. Sites identified for temporary commercial development prior to a disaster event may become unusable for development due to extreme and unpredictable damage during the disaster. While several potential sites in a diversity of locations should be identified pre-disaster in order to account for this

unpredictability, opportunities that present themselves, like Re:START's integration with the reconstruction with the city's pedestrian mall, should be acknowledged and leveraged in the post-disaster planning response.

Like all land-use planning decisions, these choices should appropriately balance the needs of residents, businesses, and the environment, but also have the added responsibility to facilitate and not hinder the reconstruction effort.

6.2 Site planning and urban design

The layout and urban design of a temporary small business development and its integration with the surrounding urban form demands particular consideration for post-disaster recovery. The small business development form serves a very different role for a customer who might choose to shop there instead of a big box or large franchise retail location. These motivations may include a desire to support the local economy, a unique selection of merchandise, or often the shopping experience itself. Re:START Christchurch demonstrates how important the environment and context of a temporary commercial development is to its success.



Figure 7. A group of dancers in one of Re:START's plazas. (Lifemark, 2012)

An acknowledgement that small business developments function as much more than just sales venues encouraged Re:Start's developers away from simply arranging the buildings to maximize the potential retail space of the site (Strongman, 2012). The community event shown in Figure 7 highlights how small business developments and shopping districts owe a significant amount of their success to their ability to function as community nodes, beautiful public spaces, and cultural hubs. Re:START's thoughtful layout, generous provision of public space, incorporation of landscaping, and integration with the city's urban structure demonstrates the potential for meaningful place-making in a disaster recovery development.

The flexibility of Re:START's layout also represents a best practice in temporary disaster recovery development. It was known from the project's inception that the land on which Re:START was initially developed would eventually have to be surrendered for a permanent development in its place. The transition process of moving the northern precinct of Re:START to its second location and the reconfiguration of the development to its new site plan was substantially aided by initially creating Re:START with flexible and

adaptable urban design elements. Future post-disaster temporary commercial developments should consider similar design features to maximize their versatility for a long term of recovery.

6.3 Built-form potential

When considering possible built-form designs that temporary commercial developments might take, there are numerous potential choices to be considered. Improvisation or re-use of building materials may be necessary due to unknown impacts resulting from the disaster. The choice of built-form is further dependent upon the intended permanence of the development and the need for added security following a disaster. Complicating matters further, housing, shelter, and first aid are generally given priority access to available building materials in the post-disaster city (Nappi & Souza, 2015). Re:START Christchurch offers an exceptional lesson on recognizing these limitations and that an easily attainable building material (shipping containers) and a contemporary building trend (container architecture) offer an ideal interim commercial retail space. While shipping containers may not be the perfect built-form for all scenarios, they serve to fulfill a significant amount for the criteria for successful temporary commercial developments and should be strongly considered.

The recognition of aesthetic novelty in the Re:START case study also presents a valuable lesson. By incorporating the contemporary and unique built-form design of shipping container architecture into the development, the developers helped establish a sense of place and character that served as a draw for people. However, because there are now many examples of shipping container malls worldwide, the novelty of the form may be wearing off and future developments will not be able to rely on it for as much of a draw. The built-form of Re:START demonstrates the important role that unique architecture has to play in the success of a post-disaster commercial development. Future post-disaster initiatives would be wise to investigate current trends in temporary built-form and consider the potential to leverage the innovation and originality of these to build a sense of place, character, and to act as a draw for the development.

6.4 The problem with temporary

After a disaster, there is often a strong push to construct buildings to bridge the interim reconstruction as quickly, cheaply, and wherever is possible. The development of these makeshift structures is often detrimental to the long-term recovery process and should be avoided. Due to the scale of redevelopment necessary and the length of time reconstruction will take, any developments meant to bridge the interim can invariably take on a more permanent role than intended. As noted by Walker (2012), architects are often hesitant to brand things as temporary and recognize that structures “built for a short period of time, have just as many design questions as things that are there 'forever'” (p. 22). Even if the temporary structure doesn’t take on a more permanent role, while it is in place, it serves to establish new patterns of use that must be accounted for when permanent development does occur. In the Re:START Christchurch scenario, the development has proven so popular that there was serious pushback against the removal of the development in place of a more permanent development in 2013 (McClure, 2013). Officials must prepare for this possibility; either through a planned strategy for relocation as redevelopment proceeds or through an embracing of the possible permanence of temporary developments by acknowledging a long term in-situ strategy for the site.

6.5 Opportunity to address pre-existing issues

The catastrophic impacts of a natural disaster should never be understated. They are horrific events that need to be prepared for and mitigated at all costs. However, when one of these events does occur, the potential for change that they generate must be embraced. Lee (2013) notes that while there is often a desire to “build back better” (p.483), aid agencies and governments often rush their decision making processes after major disasters and fail to consider the long-term impacts that such decisions will have on affected communities. Efforts must be made to avoid these hazards as the massive redevelopment necessary presents a real opportunity to make significant improvements to urban design, urban form, eliminate non-conforming uses, address social equity, achieve environmental goals, and empower a community to redesign their city to reflect their

desires (Edgington, 2001). However, the question of “for whom rebuilding can be considered ‘better’” (Lee, 2013, p.484) must be addressed and this process of building back better must be delicately navigated and include a substantial community engagement component. Through a frank acknowledgement of the opportunities presented by a natural disaster and a sincere public consultation process, a disaster can function as a catalyst for meaningful urban revitalization and can help to create a stronger sense of place and community in the post-disaster city.

6.6 Further research

The research into recovery planning and policy initiatives that are supportive of temporary commercial developments has limited case studies from which to draw best practices from. Any future recovery initiatives should be incorporated into a cross-sectional case study analysis in order to better inform the planning and policy concerning these developments.

While this paper consists primarily of an investigation into the built-form and urban design characteristics contributing to small business disaster recovery, there are additional elements in the recovery process that are worthy of further investigation. Christchurch’s recovery efforts involved significant partnerships with artists, businesses, and volunteer groups whose work has had a significant impact on the commercial sector’s recovery. Three groups in particular stand out for their efforts: Greening the Rubble Trust¹ (2011), Life in Vacant Spaces² (2013), and Gap Filler³ (2016). These temporary land-use initiatives have functioned to great acclaim in Christchurch and have the potential to offer serious insights into best practices for temporary land-use in other cities recovering from natural

¹ A volunteer community project that works to transform the sites of demolished commercial buildings into temporary public parks and gardens.

² An independent trust managing privately owned, vacant, sites and buildings with the goal of organizing short and medium term uses for them.

³ An urban regeneration initiative that facilitates temporary, short-term, and small scale projects, events, installations, and amenities in Christchurch through work with local community groups, artists, engineers, designers, and landowners.

disasters. Because of this, further research into these community and volunteer driven temporary recovery efforts is warranted.

7 - Conclusion

Temporary commercial developments offer a real opportunity to positively impact the recovery effort of small businesses following a natural disaster. While the needs of post-disaster small businesses are not that dissimilar from everyday small businesses, the former have to contend with extremely limited timeframes, resources, and capital. Through the thoughtful application of lessons learned from the Re:START Christchurch development and an embracing of innovative design solutions, these added impacts can be mitigated and a city's small business community can emerge in a stronger state than before.

The Re:START development particularly demonstrates the potential that shipping container construction offers for temporary developments. Shipping containers are now being used in other cities to create interesting retail environments without the disaster context. Some of the more famous examples include Dekalb Market in Brooklyn, Boxpark Shoreditch Mall in London, and Common Ground in Seoul. The success of these developments solidifies the building material's suitability for retail construction. The fact that shipping containers are incredibly durable and are easily acquired, even in a post-disaster context, should make them one of the premier building materials in recovery developments. This is particularly relevant to the Pacific Northwest as many of the major cities of the region have substantial port facilities that could easily receive and distribute shipping containers to developments throughout the recovery process. The novelty of shipping container architecture also contributes to critical placemaking and identity forming in a post-disaster city and can serve to create a distinct and memorable experience that recovering communities can embrace.

Re:START Christchurch also clearly establishes the importance of urban design in temporary post-disaster developments. The development's success is as much a function of its role as a community hub and cultural node as it is its collection of restaurants and shops. Its ability to play this role can be significantly attributed to the urban design features of the space. The pedestrian-only street, the large courtyards with significant landscaping and seating, and the human scale built-form and pathways of the internal circulation all contribute to the incredible sense of place that Re:START holds.

Finally, the siting of the Re:START Christchurch development shows how important a temporary commercial development can be for not just small business owners, but a city as a whole. While it could have been easy to write-off the central city of Christchurch and develop a new commercial district on the outskirts of town, Re:START's location right in the heart of the city represented a commitment to the historic retail and movement patterns of the residents. Though the development is relatively small and doesn't singlehandedly support the economy of the city, Re:START is a symbol for the identity of the city and can offer people hope for the future of Christchurch's downtown businesses.

It is inevitable that a significant natural disaster will occur in a developed country and similarly devastate its commercial sector's built environment. When this occurs, having precedence from which to draw best practices from will become invaluable. Though catastrophic and distressing, a major earthquake is a reality the Pacific Northwest will have to face in the near future. The metropolitan areas of the region share many similarities with Christchurch, New Zealand and will no doubt draw upon the knowledge gained through its recovery and redevelopment. In those trying times, it will be essential to recognize that, "disasters create an opportunity to build back better communities and economies" (Hayashi, 2012, p.209). An application of the lessons learned from the Re:START development could transform Christchurch's unfortunate experience into one that can provide hope and can help to save the small businesses of the Pacific Northwest. By applying these best practices, the Pacific Northwest can boldly face its coming challenges with confidence and strategy.

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